

## Appendix F2

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### Historical Resource Inventory and Evaluation

*Prepared by: ASM Affiliates, Inc.*

**HISTORICAL RESOURCE INVENTORY  
AND EVALUATION**  
*for the*  
**PROPOSED 111 CALEXICO PLACE PROJECT**

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# TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
<b>EXECUTIVE SUMMARY .....</b>	<b>iii</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
PROJECT LOCATION AND DESCRIPTION .....	1
PREVIOUS STUDIES .....	1
HISTORIC DOCUMENTATION AND LITERATURE REVIEW .....	1
<b>2. HISTORICAL BACKGROUND .....</b>	<b>5</b>
HISTORICAL OVERVIEW .....	5
IRRIGATION SYSTEMS IN THE IMPERIAL VALLEY .....	5
Organization Of Imperial Irrigation District .....	8
All-American Canal .....	8
CALEXICO .....	9
Central Main Canal .....	11
Dogwood Canal.....	11
<b>3. RESOURCE DOCUMENTATION .....</b>	<b>13</b>
CENTRAL MAIN AND DOGWOOD CANALS .....	13
PHOTODOCUMENTATION .....	13
<b>4. EVALUATION .....</b>	<b>21</b>
STANDARDS FOR SIGNIFICANCE ASSESSMENT .....	21
INTEGRITY .....	22
RESOURCE EVALUATION.....	22
Criterion A .....	22
Criterion B.....	23
Criterion C .....	23
Criterion D .....	23
INTEGRITY .....	23
IMPACTS ASSESSMENT.....	24
<b>5. CONCLUSIONS.....</b>	<b>27</b>
<b>REFERENCES.....</b>	<b>29</b>

## LIST OF FIGURES

<u>Chapter</u>	<u>Page</u>
Figure 1. Project area shown on USGS 7.5' Heber and Calxico quadrangles. ....	2
Figure 2. Proposed project. ....	3
Figure 3. USGS, 1908 "El Centro" Quadrangle 1:125,000 Scale. ....	12
Figure 4. West side of Scaroni Road bridge, facing east. Central Main Canal is to the right in the distance beyond Scaroni Road and Highway 111. Dogwood Canal is at the center. ....	14
Figure 5. Photograph taken on the east side of Scaroni Road bridge, facing the northwest. Central Main Canal is at the center of the photograph. ....	14
Figure 6. Scaroni Road bridge. Photograph was taken on the east side of the bridge, facing slightly northwest. ....	15
Figure 7. Scaroni Road bridge (left) and Highway 111 (right), facing north. Photograph taken on east side of the bridge. ....	15
Figure 8. Scaroni Road bridge showing concrete and wooden guard rail, west side of the roadway facing north. ....	16
Figure 9. Central Main Canal from Scaroni Road, facing westward. ....	16
Figure 10. Dogwood Canal, just west of Scaroni Road, facing westward. ....	17
Figure 11. Photograph taken immediately south of Dogwood Canal, facing northeast toward Scaroni Road. Dogwood Canal culvert outlet structure is shown at bottom left. ....	17
Figure 12. Central Main Canal at left and Dogwood Canal at right, separated by two unpaved roadways (one at higher elevation than the other). ....	18
Figure 13. Dogwood Canal in foreground and fallow agricultural fields in background, facing north. ....	18
Figure 14. Central Main Canal in foreground and semi-trailer storage and open space south of the Canal. ....	19
Figure 15. Unpaved farm road north of Dogwood Canal, looking toward Jasper Road. ....	19
Figure 16. Unpaved farm roadway at Jasper Road, facing south toward Dogwood Canal. ....	20

## **EXECUTIVE SUMMARY**

This report was prepared as an addendum to a cultural resources inventory for the 111 Callexico Place project completed by Harris Archaeological Consultants in 2006 (Harris 2006). This study provides an inventory and evaluation of historical resources within the proposed project Area of Potential Effect (APE), including the Central Main Canal and the Dogwood Canal, both constructed prior to 1908 as part of the Alamo Canal irrigation system.

Both the Central Main Canal and the Dogwood Canal are recommended eligible to the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR) for their association with the Alamo Canal irrigation system, the earliest in the Imperial Valley, and their association with the All-American Canal distribution system.

The proposed project will not result in direct or indirect adverse impacts to the canals.

# **1. INTRODUCTION**

This report provides the results of a historical resources inventory and evaluation conducted for the proposed 111 Calexico Place Project, located in the City of Calexico, California.

## **PROJECT LOCATION AND DESCRIPTION**

The proposed Project is the development of Commercial Highway land uses, including a Class III tribal gaming casino facility and hotel facility within a 232-acre project site in the City of Calexico (Figure 1). The project site is located at the southwest corner of the intersection of Jasper Road and State Highway 111 (SR-111). It is bordered by Jasper Road to the north, on the east by SR-111, and on the south and west by the Dogwood Canal and Central Main Canal. The proposed project will require the construction of a new road, Sunset Boulevard, south to Cole Road and the widening of the existing Scaroni Road. A new bridge will be constructed over the Central Main and Dogwood canals on Sunset Boulevard and the existing bridge over the canals on Scaroni Road will be widened (Figure 2).

## **PREVIOUS STUDIES**

Harris Archaeological Consultants submitted a cultural resources inventory report in 2006 for the Calexico Place Project (Harris 2006). The study consisted of an archaeological survey and records search for the project area, but did not include an evaluation or impact assessment for historic resources located in the project area, namely the Central Main and Dogwood canals. ASM Affiliates, Inc. (ASM) was retained by BRG Consulting Inc. to provide documentation of the canals and an assessment of impacts to these resources.

## **HISTORIC DOCUMENTATION AND LITERATURE REVIEW**

A field inspection and photodocumentation of the Central Main and Dogwood canals was completed by Sarah Stringer-Bowsher, M.A., Project Historian, on July 1, 2008. Ms. Stringer-Bowsher focused her documentation on the present and proposed bridge sites and along the stretch of the canals from Scaroni Road west to a point slightly northwest of the future Sunset Boulevard extension. In addition, documentation of the fallow field occurred at the proposed future intersection of Jasper Road and Sunset Boulevard. Descriptions of the photodocumentation and photographs are provided in Chapter 3.

This study also included limited archival research and a literature review. Relevant cultural resources management reports and published sources relating to the history of irrigation in the Imperial Valley were reviewed. Information was also collected from the Imperial Irrigation District (IID), and from the Southeast Information Center. The principal sources consulted for

# 1. Introduction

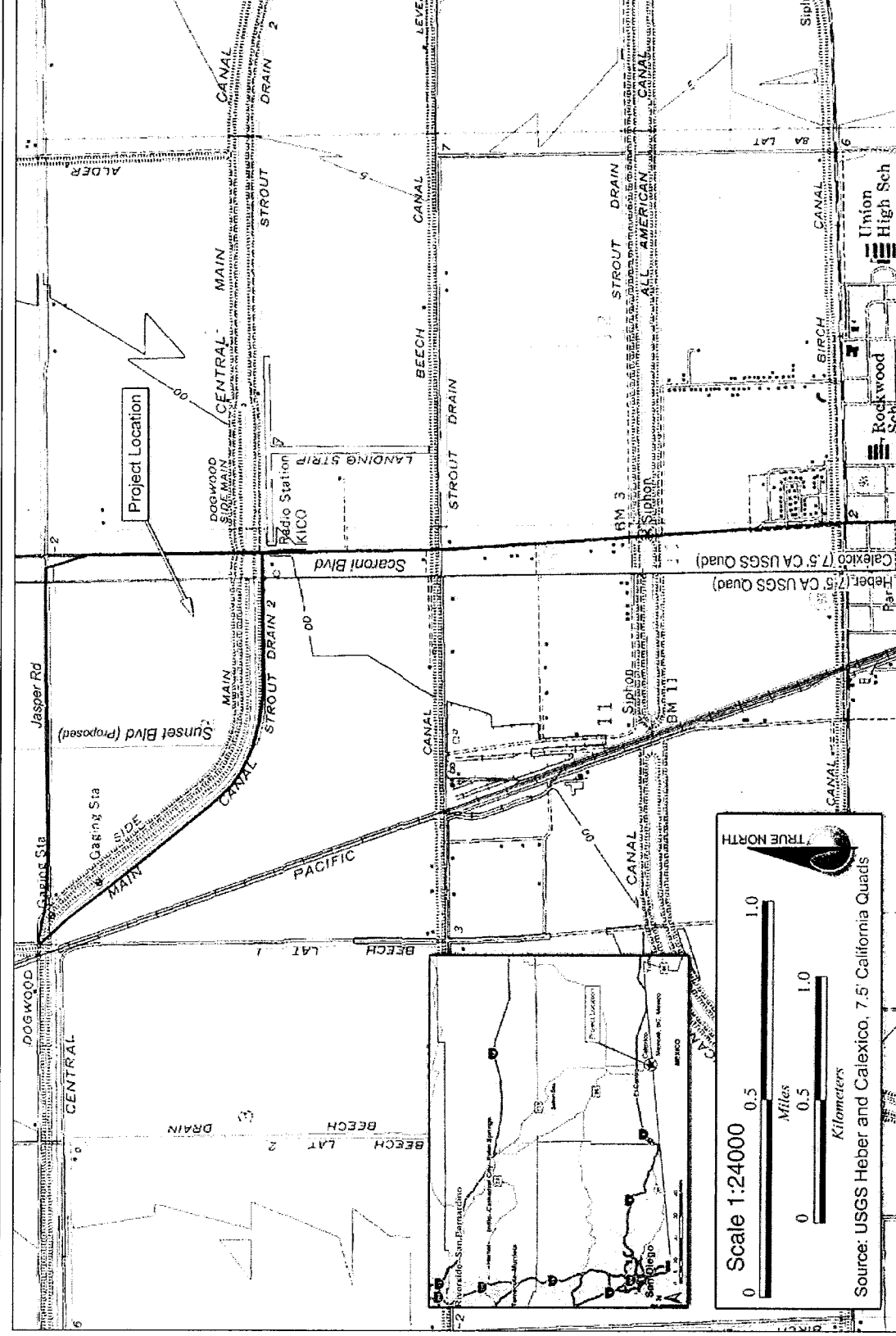


Figure 1. Project area shown on USGS 7.5' Heber and Calexico quadrangles.

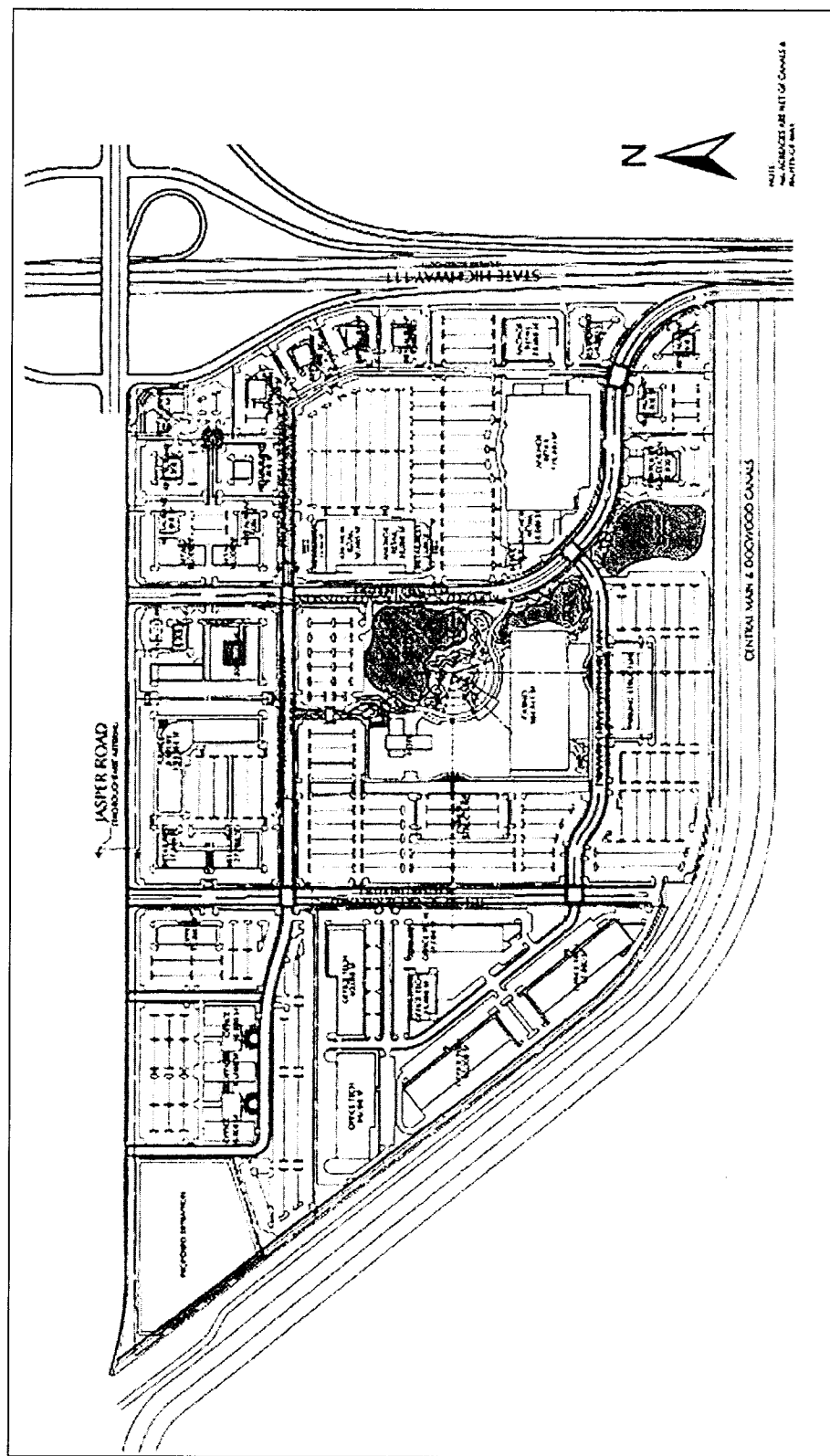


Figure 2. Proposed project.



the historical context provided here include M. J. Dowd's (1956) *History of Imperial Valley Irrigation District and the Development of Imperial Valley*; the historical context for water conveyance systems in California prepared by JRP Consulting for Caltrans (JRP 2000); and a number of irrigation-related historical evaluations completed by ASM and others within the Imperial Valley (Ní Ghabhláin 2006; Ní Ghabhláin and Palette 2006; Ní Ghabhláin and Schaefer 2005; Pfaff et al. 1992; Schaefer and O'Neill 2001; Schaefer and Ní Ghabhláin 2003).

## 2. HISTORICAL BACKGROUND

### HISTORICAL OVERVIEW

The history of the Imperial Valley is in large part a history of irrigation, as the development and settlement of the valley depended entirely on the development of irrigation systems. Without a dependable water supply, the Imperial Valley would have remained a desolate, inhospitable, and unproductive desert. The Central Main Canal is one of the principal canals that transports water from the All-American Canal to the Imperial Valley for irrigation. The Dogwood Canal is a lateral canal branching off the Central Main Canal bringing water to individual water users. Both canals are part of a vast water delivery system, extending from the Colorado River to the Imperial Valley, upon which the economy of the Imperial Valley depends. In order to evaluate the significance of the canals, it is necessary to understand the historical context of this delivery system. This chapter provides a review of the history of irrigation in the Imperial Valley, from its beginnings in the latter part of the nineteenth century to the completion of the All-American Canal. Both the Central Main Canal and the Dogwood Canal were part of the earliest irrigation system established in Imperial County, dating to the first decade of the twentieth century.

### IRRIGATION SYSTEMS IN THE IMPERIAL VALLEY

The possibility of diverting water from the Colorado River to irrigate the Imperial Valley was first raised in 1853 by William Blake, a geologist with an expeditionary unit charged with surveying the southern Colorado Desert for railroad routes. Blake's geological study observed that over thousands of years overflows of the Colorado River had drained into the Salton Trough through the New and Alamo rivers, forming ancient Lake Cahuilla. He also noted the apparent fertility of the alluvial soils of the Imperial Valley and suggested ways in which water might be brought from the Colorado River:

If a supply of water could be obtained for irrigation, it is probable that the greater part of the desert could be made to yield crops of almost any kind... By deepening the channel of New River, or cutting a canal so low that the water of the Colorado would enter at all seasons of the year, a constant supply could be furnished to the interior portion of the desert [Blake 1853:110].

Following Blake's report, several attempts were made to finance construction of a canal to bring water to the Imperial Valley. The first diversion canal and irrigation system was constructed by the California Development Company (CDC) under the direction of Charles Rockwood and George Chaffey (Dowd 1956:10ff; Frisby 1992:29ff; Starr 1990; Tout 1931). Construction on the Alamo (or Imperial) Canal, as it was known, began in August 1900. An intake canal diverted water from the Colorado River from a point adjacent to Pilot Knob just north of the U.S.-Mexico border called Hanlon's Heading, south to Mexico. In Mexico, CDC

made use of the Alamo overflow channel of the Colorado River to convey the water a distance of approximately 40 miles. Minimal work was required to render the channel serviceable as a canal. Four miles east of Calexico another canal, the Central Main Canal, was constructed to transport the water north to the Imperial Valley. On May 14, 1901, the first diversion was made from the Colorado River to the new intake canal and the first delivery of water occurred in June 1901 (Dowd 1956:20). Cultivation of 1,500 acres began in the fall of that year. By the second year, 100,000 acres were irrigated in the Imperial Valley (JRP and Caltrans 2000).

Once water was available, settlement and cultivation of the valley were possible. George Chaffey had used a system of linking land and shares in a mutual water company in San Bernardino County to develop Ontario and Etiwanda, and the CDC employed the same method in the development of the Imperial Valley (JRP and Caltrans 2000:14, 17). Settlers could purchase up to 320 acres of government-owned land at \$1.25 an acre, but they also had to purchase \$7,900 worth of stock from Chaffey's Imperial Land Company, established by the CDC in one of the 13 mutual water companies in the valley. Frequently, settlers were unable to come up with the cash required to buy the water stock and were forced to convey to the Imperial Land Company the mortgage on the land or the water stock as security on a six-percent note on the cost of the water stock (Starr 1990:26).

The Central Main Canal was extended from the U.S.-Mexico border to the northern boundary of Mutual Water Company No. 1 at Heading 4, a few miles to the southwest of the present city of Brawley. It began service in March 1902. From this point, water was supplied to Water Company No. 4 and to Water Company No. 8 through a branch canal and flume across the New River (Dowd 1956:20). The West Side Main Canal, formerly the Encina Canal, was constructed to provide water to Mutual Water Company No. 6. It began at Sharp's Heading, traveled across the New River by flume and crossed the international boundary at a point approximately 10 miles west of Calexico. Additional canals constructed included the East Side Main Canal, which supplied water to Water Company No. 7 and the Low Line or No. 5 Main Canal that served Water Company No. 5. By January 1, 1905, over 80 miles of main canals and over 700 miles of distribution canals had been constructed in Imperial and Mexicali valleys (Dowd 1956:21).

There were few settlers in the Imperial Valley prior to the construction of the Alamo Canal. In 1901, the only settlers were surveyors laying out the canals. With the completion of the main canals, settlement and cultivation of the Valley followed rapidly. By 1902, the population had risen to 2,000. It reached 7,000 by 1904, and just one year later it was between 12,000 and 14,000. The number of irrigated acres during the same time period grew from 1,500 in 1901 to 80,000 acres in 1905. By 1911, 220,000 acres were under cultivation (Dowd 1956:23).

By the turn of the twentieth century, the federal government was actively attempting to wrestle control of public water resources out of the hands of private enterprises. The U.S. Reclamation Service (later known as the Bureau of Reclamation) was established in 1902 by the Reclamation Act with the objective of fostering the construction of irrigation projects, ensuring the equitable distribution of water resources, and thereby promoting the settlement of the

western states. One of the first projects recommended by the Reclamation Service was the Yuma Project, which included the construction of a dam (Laguna Dam) at the potholes site. It appears that one of the objectives of the Yuma Project was the diversion of water to the Imperial Valley in addition to Yuma, Arizona (Pfaff et al. 1992).

In the Imperial Valley, the Reclamation Service began to challenge the right of the CDC to appropriate and profit from a publicly-owned resource. The Colorado River, being a navigable waterway, was considered a public resource under state law and the appropriation of its water by the CDC was not recognized by the U.S. government (Dowd 1956:20). Under pressure from the Reclamation Service, CDC sought to secure the right from the Mexican Government to divert water from the Colorado River in Mexico. This concession was granted in June 1904 (Dowd 1956:23).

In the winter of 1902-1903, and again in 1904, there were water shortages caused primarily by silting of the intake canal. These problems, coupled with general dissatisfaction on the part of Imperial Valley farmers with CDC, led to growing support in the valley for federal control of the project. The Imperial Water Users Association, formed in 1904 by valley farmers to promote a Reclamation takeover of the project, negotiated the sale of the CDC and its properties to Reclamation for \$3 million. The Reclamation Service recommended against the purchase to the Secretary of the Interior, due in part to an adverse soil survey report filed by the U.S. Department of Agriculture in 1901 and 1903.

In an effort to overcome the problems with silting of the canal and channel and to prevent water shortages in the coming winter, CDC excavated a new channel without constructing a head gate to control the flow of water. As a result, winter flooding in 1905 caused the Colorado River to break its banks, overflowing through the New River and Alamo channels, flooding the Imperial Valley and creating the Salton Sea as we know it today. Repeated attempts to stem the flow failed, and the river continued to flow through over a period of two years. The CDC, already in financial difficulty prior to the canal break, was taken over by the Southern Pacific Company (SPC) in June 1905. Following personal intervention by President Roosevelt, and assurances by him that the costs of damming the channel would be reimbursed by the U.S. government, SPC finally managed to close the break in February 1907.

As a result of the flooding, the western half of the Imperial Valley was under water and approximately 13,000 acres of irrigable land was destroyed. By 1907, the Salton Sea was a lake 50 miles in length and 10 to 15 miles wide. An additional 30,000 acres, including 12,000 acres under cultivation, were left without a water supply and all crops from this land were lost. Only the banks of the Central Main Canal protected the eastern part of the Valley. The wooden flume, which carried the West Side Main Canal across the New River, was also destroyed. Consequently the entire canal and flume were rebuilt and extended to serve the area to the west of New River.

## **Organization Of Imperial Irrigation District**

The CDC declared bankruptcy in 1909, as a result of litigation arising from the 1905 river break. In order to protect their interests, the people of the Imperial Valley voted in favor of establishing the Imperial Irrigation District (IID). The IID was organized for the purpose of acquiring the rights and properties of the CDC and its Mexican subsidiaries. When established, the IID included 513,368 acres and an additional 65,000 acres of water stock of the mutual water companies (Dowd 1956:53). At this time, claims and judgments against the CDC amounted to some \$3 million. In addition, funds would be needed to complete improvements and repairs to the canal and distribution system. In 1914, the IID voted a bond issue of \$3,500,000 to purchase the CDC and its Mexican subsidiaries from the Southern Pacific Company and to undertake improvements to the canal and levees, including the East Highline Canal and its subsidiary E Lateral. In June 1916, the Southern Pacific Company deeded all of the properties of the CDC and its Mexican subsidiaries to the IID. Between November 1922 and March 1923, IID acquired each of the 13 mutual water companies for a total sum of over \$4.7 million.

## **All-American Canal**

The Fourth Annual Report of the Reclamation Service in 1904 included plans for an All-American Canal from Laguna Dam to Imperial Valley. This alignment required a 15.5-mile tunnel through the East Mesa Sand Hills, which would require an expenditure of \$20 million. The cost of the tunnel rendered this proposal financially infeasible. Following the 1905 river breach, President Roosevelt recommended that the U.S. acquire the properties of the CDC, construct an All-American Canal, and develop the Imperial Valley.

As soon as it was formed, IID began to examine alternatives to the existing Alamo Canal. Because of the legal uncertainties of diverting water from a foreign country and dealing with a foreign government, IID looked closely at the possibility of constructing an "All-American Canal." In 1913, the District conducted a field survey for such a canal, which would divert water from Laguna Dam and would parallel the international boundary to the East Highline Canal. In a report to IID Board of Directors in 1913, P. N. Nunn proposed that a realignment of the canal could shorten the length of the proposed tunnel through the Sand Hills to eight miles, thereby reducing the cost. He also proposed that the construction of an open cut through the Sand Hills would cost a fraction of the cost of a tunnel. His estimate for the construction of the canal and two power plants was \$12 million. The following year, IID began negotiations with the Secretary of the Interior with the objective of acquiring rights to divert water from Laguna Dam. The Imperial Laguna Water Company, formed in 1914 to develop East Mesa lands, also proposed construction of a canal from Laguna Dam to East Mesa. By 1918, IID and the Imperial Laguna Water Company had agreed to cooperate in the construction of a canal to service both East Mesa and the remainder of the Imperial Valley.

In 1919, the All-American Canal Board submitted a survey and cost estimate to the Secretary of the Interior (Mead et al. 1919). This was followed by the Fall-Davis report, which recommended control of the Colorado River by a multiple purpose reservoir project near

Boulder Canyon, and the construction of a highline canal, together with a diversion dam and desilting works, located entirely within the United States (Wilbur and Ely 1948). The Coachella Valley Water District (CVWD) was formed in 1918 to protect the interests of Coachella Valley farmers. During deliberations on the Boulder Canyon Act, the CVWD lobbied vigorously for inclusion of the Coachella Canal in the project to deliver water to the Coachella Valley. The Boulder Canyon Project Act was finally approved by an act of Congress on December 21, 1928, following seven years of deliberations (Wilbur and Ely 1948). It ratified the Colorado River Compact, authorized the construction of Boulder Dam and the All-American and Coachella canals at a total estimated cost of \$165 million.

Detailed surveys for the All-American Canal route began in 1929 and were completed in 1930. As a result of these surveys, it was discovered that by constructing a diversion dam five miles north of Laguna Dam (Imperial Dam), an additional 22 feet of elevation would be accrued, less excavation would be required at Pilot Knob, and an additional 26,000 acres could be irrigated in the Sand Hills. Furthermore, in spite of the cost of building the Imperial Dam, the upper route would result in a savings of \$2.5 million.

Construction of the All-American Canal began in 1934, following the construction of Boulder (Hoover) Dam. The construction of Imperial Dam and Desilting Works began in January 1936, and was completed in July 1938. The first irrigation water was delivered through the All-American Canal in 1940 (Bureau of Reclamation 1948). For a history of the construction of the All-American Canal, see Schaefer and O'Neill, *The All-American Canal: An Historic Properties Inventory and Evaluation*. The Coachella Canal was constructed between 1938 and 1948 (Schaefer and Ní Ghabhláin 2003).

At the time that the All-American Canal first started delivery of water to the Imperial Valley, on October 12, 1940, much of the land in the Imperial Valley (approximately 414,000 acres) was already under irrigation. By 1954, an additional 38,000 acres was brought into production. The All-American Canal provided a dependable water supply to the Imperial Valley, allowing farmers to produce intensive high-risk crops with a higher per-acre value. Unpredictable water flows prior to the completion to the All-American Canal had resulted in devastating crop losses. Unparalleled growth in agricultural production followed the completion of the All-American Canal in Imperial Valley.

## CALEXICO

The Imperial Land Company was given exclusive rights to laying out town sites in the Imperial Valley by the C. D. Company. Imperial was the first town site, laid out in December 1900. The new town was dependent on wells and small lakes along the New River until the new canal system brought water in 1901. The land occupied by Calexico was donated by Chaffey in 1901 for the purpose of establishing a town site. Below is a description of the origins of the town of Calexico by Charles Robinson Rockwood, the chief engineer of the CDC, responsible for the construction of the Alamo Canal:

Calexico, which derives its name from a combination of California and Mexico, simply happened. The engineering headquarters of the company were first established at Cameron Lake, but I decided for permanent quarters to erect the company buildings at the International Line on the east bank of New River. When the buildings were established at this point we knew that we would build a town on the line, but its exact location was not fully determined upon. Mr. Chaffey laid off the town site of Calexico at the point where it is now established, in the fall of 1901, and placed the property on the market, but it was soon withdrawn from sale for the reason that the Southern Pacific Railroad, in building its branch through the Valley, desired to run straight south from Imperial to a point near the International line, from which point they would swing eastward toward Yuma. The railroad would have been built so and the town of Calexico would then have been located west of New River and about two miles west of its present location but for the fact that it would have thrown a portion of the town site on a school section which was held by a lady living in Los Angeles, who refused to listen to what we believed to be a fair offer for her property, and, as we were unable to obtain the lands necessary for our uses, we got the Southern Pacific to run the road from Imperial straight to the present location of Calexico [Rockwood 1930].

An eyewitness account of the early years of Calexico is provided by Dr. W. T. Heffernan:

My first move was to Calexico in 1901. At this date only a few tents used by the engineers engaged in running lines and procuring levels, occupied the site of the future border city. Store tents, brought from Cameron Lake, contained supplies for men employees and their families. The tents were replaced later by an adobe building erected in 1901. The post office was opened in this building with Joseph Estudillo as post master... Following the sale of the store at Imperial in 1901, I spent most of the time when in the Valley at Calexico, and as a result of my acquaintance with local conditions during that period, I feel privileged to discuss the moral tone of the community. It was a border town separated from Lower California, Mexico, only by an imaginary line. All border towns according to the vivid imagination of authors of Wild West stories abound in bandits and criminals, and life and property are not at all times safe and secure from attack. I am happy to state Calexico proved the exception. The only bad man, or so he was reputed to be, who visited Calexico came from San Diego and was laughed out of town and never returned. The only bank in the Valley during the first two or three years was at Imperial, 15 miles north of Calexico, and it was necessary to carry funds for deposit and exchange to the bank by messenger on horseback. I have heard of lurid tales of dangers passed en route, being told by one who encountered the bandits, but at the time of said occurrences no one ever heard of them [Heffernan 1930].

Calexico was incorporated on April 16, 1908.

## **Central Main Canal**

The Central Main Canal is a principal canal that transports water from the All-American Canal to the Imperial Valley for irrigation. It is part of a vast delivery system, extending from the Colorado River to the Imperial Valley, upon which the economy of the Imperial Valley depends.

The Central Main Canal was constructed by the California Development Company to transport water north from the Alamo Canal to the Imperial Valley and has been an essential waterway for the Imperial Valley since then. The Central Main Canal was extended from the U.S. border to the northern boundary of Mutual Water Company Number 1 at Heading 4, a few miles to the southwest of the present city of Brawley. It began service in March 1902. From this point water was supplied to Water Company No. 4 and to Water Company No. 8 through a branch canal and flume across the New River (Dowd 1956:20). The Central Main Canal provided water to settlers living between the New and Alamo Rivers (Frisby 1992:45). During the flooding of 1905-1907, the eastern part of the Valley was protected only by the banks of the Central Main Canal. When the All-American Canal was completed a new heading was constructed linking the existing Central Main Canal and distribution system to the All-American Canal (Ní Ghabhláin 2006:22-23).

## **Dogwood Canal**

The Dogwood Canal is one of many secondary canals that extend from the Central Main Canal waterway artery. Originally known as the Dogwood Ditch, this canal was built between 1902 and 1908 during the CDC-era of ditch and canal building (Figure 3) (USGS, "El Centro," 1908). Today it is an extension of the All-American Canal delivery system via its divergence off of the Central Main Canal.



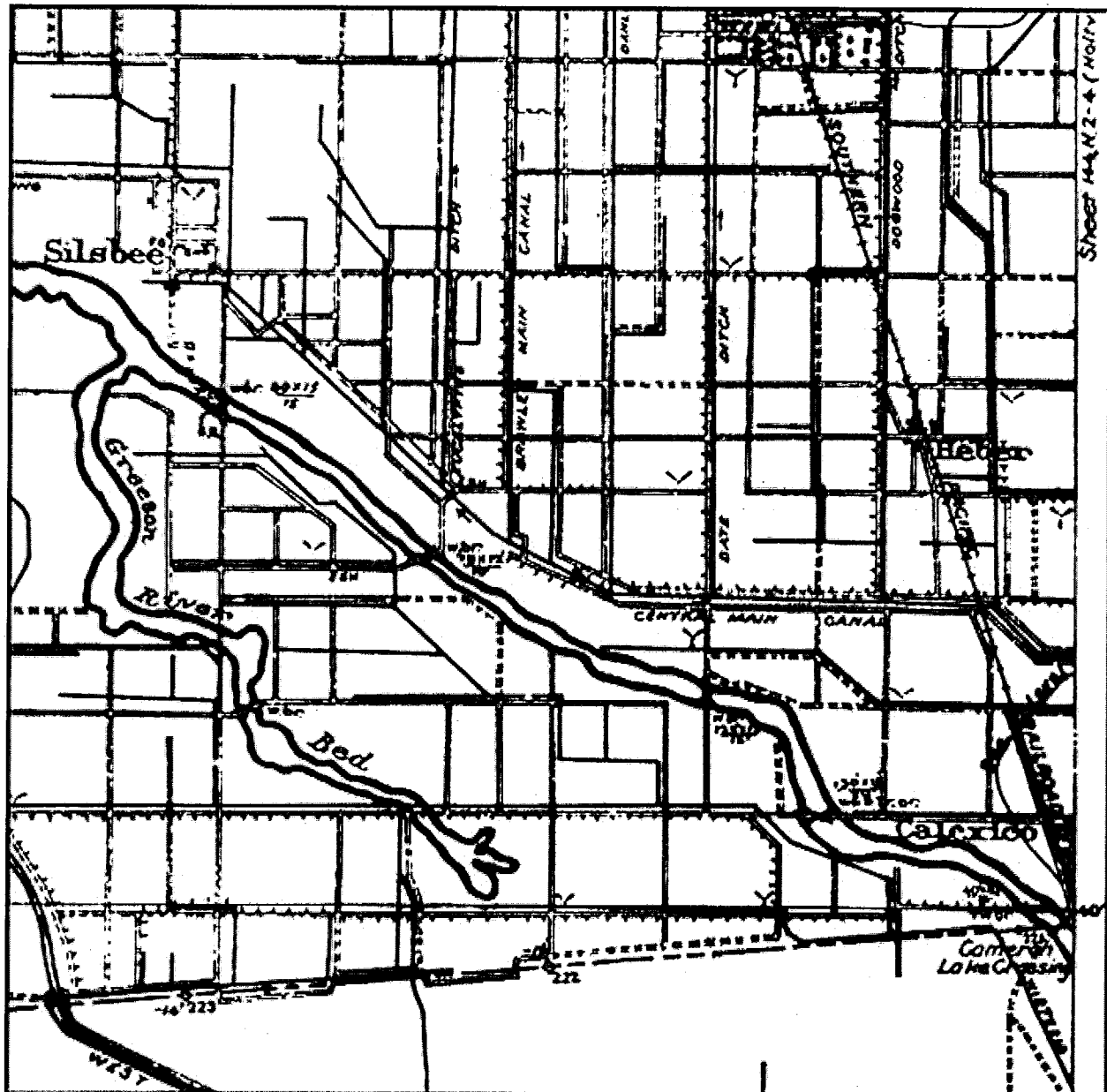


Figure 3. USGS, 1908 "El Centro" Quadrangle 1:125,000 Scale.

### 3. RESOURCE DOCUMENTATION

#### CENTRAL MAIN AND DOGWOOD CANALS

The Central Main Canal diverts from the All-American Canal northeast of Calexico, California. It serves as a primary water artery that carries water to secondary canals, including the Dogwood Canal. The Central Main and Dogwood canals parallel one another within the proposed project area, but the Dogwood Canal diverges northward at Dogwood and Jasper roads. The Dogwood Canal headgate off the Central Main Canal is located east of Highway 111 and is therefore situated outside the project area.

#### PHOTODOCUMENTATION

Since the two canals parallel one another within the project area, photographic documentation includes both canals. The photographs show the canals from the Scaroni Road extension westward via an unpaved maintenance road between the Central Main and Dogwood canals to a point just beyond the curve in the canals near the proposed extension of Sunset Boulevard.

Scaroni Road is located directly west of Highway 111 and is a north-south frontage road located between two major streets, Heber Road to the north and Cole Boulevard to the south. The two canals extend westward and cross under Highway 111 and then Scaroni Road (Figures 4-7). Highway 111 is a highly traveled route and Scaroni Road is used by locals and farmers to connect with smaller roads such as Jasper Road to the north of the two canals.

The bridge on Scaroni road over the Central Main and Dogwood canals is a concrete deck bridge with wooden railings. The bridge, like the roadway, is paved with asphalt (Figure 8).

Central Main and Dogwood canals extend westward along the southern project boundary and then curve to the northwest (Figures 9-10). An earthen extension exists just west of Scaroni Road at the Dogwood Canal. Water in the Dogwood Canal flows underneath Scaroni Road through concrete piping and, at the culvert, empties into the earthen canal pathway (Figure 11). As the two canals continue westward, they parallel one another, separated by two unpaved roadways (Figure 12).

Cultivated fields are located directly north of Dogwood Canal; some are currently fallow with stacks of hay. Semi trailer storage and open space exist south of the Central Main Canal. This area is predominately an agricultural area west of Highway 111 that abuts retail development south of the project, such as a theater and restaurant (Figures 13-14). An unpaved roadway extends northward, north of the Dogwood Canal and indicates a general alignment for the proposed Sunset Boulevard extension and bridge placement. Lands designated for the proposed project are generally fallow fields (Figures 15-16).



Figure 4. West side of Scaroni Road bridge, facing east. Central Main Canal is to the right in the distance beyond Scaroni Road and Highway 111. Dogwood Canal is at the center.



Figure 5. Photograph taken on the east side of Scaroni Road bridge, facing the northwest. Central Main Canal is at the center of the photograph.



Figure 6. Scaroni Road bridge. Photograph was taken on the east side of the bridge, facing slightly northwest.



Figure 7. Scaroni Road bridge (left) and Highway 111 (right), facing north. Photograph taken on east side of the bridge.

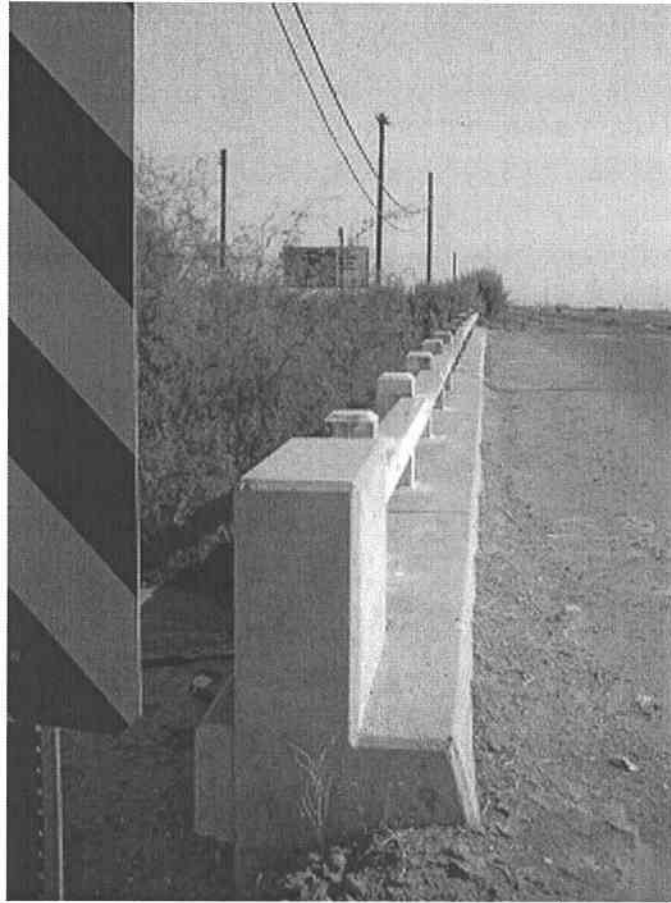


Figure 8. Scaroni Road bridge showing concrete and wooden guard rail, west side of the roadway facing north.

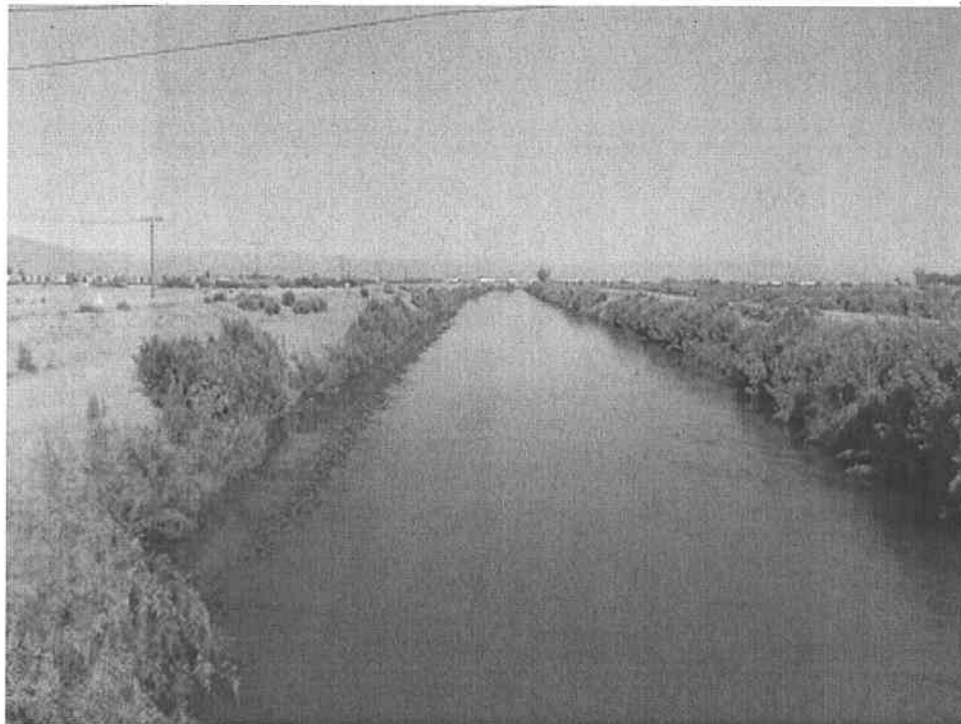


Figure 9. Central Main Canal from Scaroni Road, facing westward.



Figure 10. Dogwood Canal, just west of Scaroni Road, facing westward.



Figure 11. Photograph taken immediately south of Dogwood Canal, facing northeast toward Scaroni Road. Dogwood Canal culvert outlet structure is shown at bottom left.



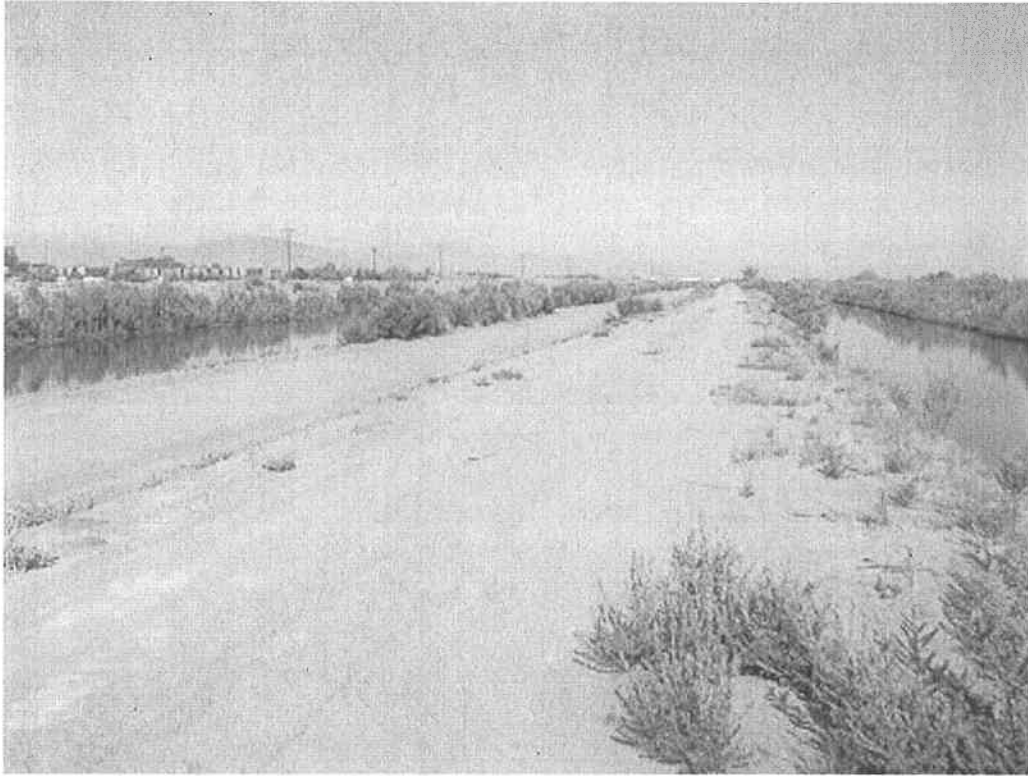


Figure 12. Central Main Canal at left and Dogwood Canal at right, separated by two unpaved roadways (one at higher elevation than the other).

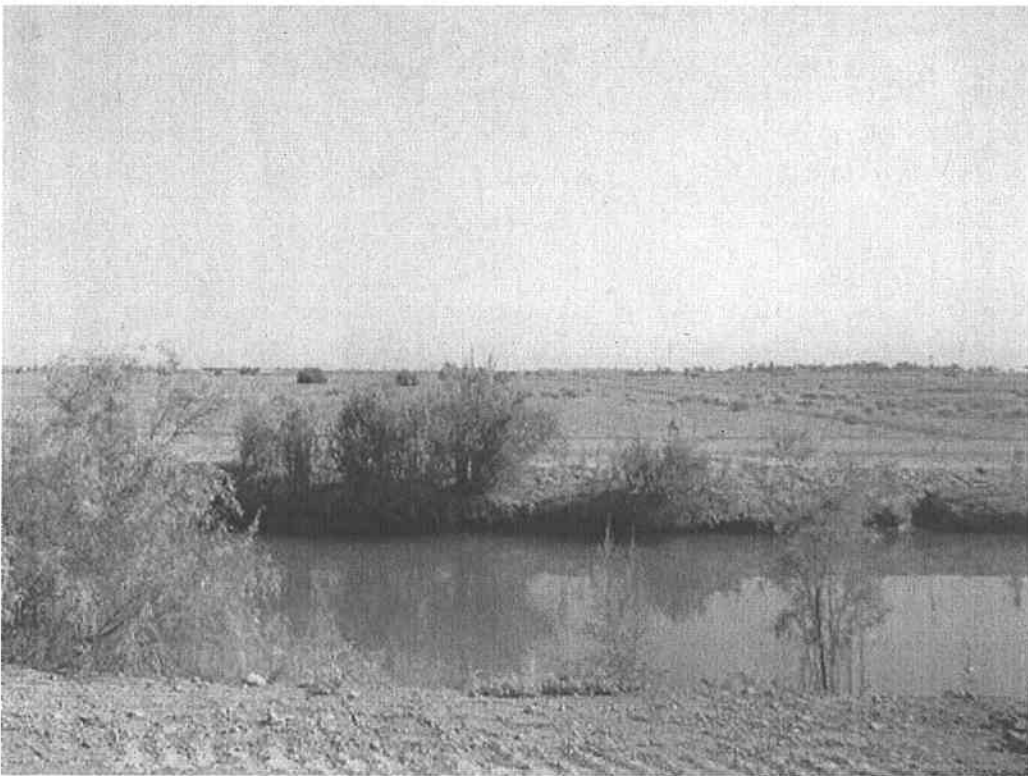


Figure 13. Dogwood Canal in foreground and fallow agricultural fields in background, facing north.



Figure 14. Central Main Canal in foreground and semi-trailer storage and open space south of the Canal.



Figure 15. Unpaved farm road north of Dogwood Canal, looking toward Jasper Road.





Figure 16. Unpaved farm roadway at Jasper Road, facing south toward Dogwood Canal.

## 4. EVALUATION

### STANDARDS FOR SIGNIFICANCE ASSESSMENT

Sections 106 and 110 of the National Historic Preservation Act (NHPA) are the primary directives for cultural resources preservation. Section 106 mandates compliance with NHPA through site evaluation. Regulations that govern the Section 106 review process are stipulated in 36 CFR Part 800 ("Protection of Historic Properties"). These regulations specify that each Federal agency consult with the State Historic Preservation Officer (SHPO) to determine if a property is eligible for the NHRP (36 CFR 800.4).

NHRP eligibility criteria, pursuant to the National Historic Preservation Act (NHPA), have become the standard for evaluating significance. As published in the *Federal Register* (November 16, 1981, 46 (220): 50189) they are stated as:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics or a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history. [36 CFR 60.4]

As of October 26, 1998, revised guidelines for the evaluation of archaeological and historical resources under the California Environmental Quality Act (CEQA) have been finalized by the State of California. They replace the old Appendix K and now more closely parallel the evaluation criteria of the NHPA (36 CFR 800). Under these new state guidelines, recommendations are provided below for significance and eligibility for the CRHR.

These significance assessments are addressed with consideration towards compliance with the CEQA final guidelines:

Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military,

or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

- A Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- B Is associated with the lives of persons important in our past;
- C Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- D Has yielded, or may be likely to yield, information important in prehistory or history. [California Environmental Quality Act, as amended 1998, Section 15064.5.a3]

## **INTEGRITY**

In addition to meeting at least one of the NRHP's eligibility criteria, a historic resource must retain sufficient integrity to convey its significance to people in the present day. The NRHP identifies seven elements of integrity: location, design, setting, materials, workmanship, feeling and association. The elements of integrity that are considered to be most important to the assessment of integrity depend on the criteria under which the resource is considered eligible.

## **RESOURCE EVALUATION**

### **Criterion A**

Both the Central Main Canal and the Dogwood Canal were part of the early Alamo Canal irrigation system within Imperial Valley, dating to the first decade of the twentieth century. The Central Main Canal began service in March 1902 and the Dogwood Canal was likely constructed shortly thereafter. It was in operation by 1908.

The significance of the Alamo Canal system to the economy of the Imperial Valley and the local region cannot be over estimated. Without irrigation, this region would have remained essentially non-productive and barely habitable land. By January 1, 1905, over 80 miles of main canals and over seven hundred miles of distribution canals had been constructed in Imperial and Mexicali valleys. Settlement and cultivation of the Imperial Valley rapidly followed the completion of the main canals. By 1902 the population of Imperial Valley was 2,000, and by 1905 it was between 12,000 and 14,000. The number of irrigated acres during

the same time period grew from 1,500 in 1901 to 80,000 acres in 1905. By 1911 a total of 220,000 acres were under cultivation.

At the time that the All-American Canal was completed in 1940, over 414,000 acres of land was already in production in the Imperial Valley, and the All-American Canal was simply hooked into the existing distribution system. The real benefit of the All-American Canal water supply to the Imperial Valley was its dependability, allowing farmers to produce intensive, high-risk crops with a higher per-acre value. Unpredictable water flows prior to the completion to the All-American Canal resulted in devastating crop losses. Unparalleled growth in agricultural production followed the completion of the All-American Canal in Imperial Valley. The value of crops rose from \$5 million in 1940 to \$65 million in 1954, a staggering 1,122 percent growth (Bureau of Reclamation 1955:8).

The Alamo Canal and the Imperial Valley distribution system (including the Central Main and Dogwood canals) are evaluated here as eligible to the NRHP and the CRHR on a local and regional level based on Criterion A, their association with events that have made a significant contribution to the history of California. The period of significance would include both the period of use of the Alamo Canal, and the period following the completion of the All-American Canal. The Dogwood Canal and the Central Main Canal would be eligible as contributing elements of the distribution system.

### **Criterion B**

The construction of the Alamo Canal and distribution system is not closely associated with any single person and therefore this criterion does not apply to this evaluation.

### **Criterion C**

The Central Main and Dogwood canals are unlined earthen canals that were constructed by standard methods at the time. No innovative technologies or design elements were employed in their construction. They are therefore not eligible under Criterion C.

### **Criterion D**

This criterion does not apply to structures and is generally employed in the evaluation of the research potential of archaeological sites.

## **INTEGRITY**

As the Central Main Canal and the Dogwood Canal are recommended eligible under Criterion A, the assessment of integrity focuses on the essential physical qualities that must be present if they are to represent their significance. In this regard the most important elements of integrity are: location, design and materials, although setting and feeling are also considered.

Both the Central Main Canal and the Dogwood Canal retain sufficient integrity to convey their significance. The location of these canals has remained unchanged since their construction beginning in 1902. The canals were constructed as unlined earthen canals and this design has remained unchanged. The canals are dredged and raked on a regular basis to remove weeds that clog the system, but this maintenance does not alter the design or materials of the canals. The setting, the physical environment of a property, has also remained essentially unchanged over time. The canals are flanked by dirt access roads and berms, just as they were immediately following construction. The element of 'feeling' is defined as "a property's expression of the aesthetic or historic sense of a particular period of time." The appearance of the canals has remained essentially unchanged over time and therefore they retain good integrity of feeling. Structures along the canals, such as checks, may have been altered or replaced over the years, so that these structures may not retain sufficient integrity for eligibility to the NRHP or the CRHR. The canal alignments, however, appear to retain sufficient integrity to convey their significance. The use of the canals has also remained changed since their construction.

## IMPACTS ASSESSMENT

Under 36 CFR Part 800.5 "an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

Adverse effects on a property include, but are not limited to:

- I. Physical destruction of or damage to all or part of the property;
- II. Alteration of a property...that is not consistent with the Secretary of the Interior's standards for the treatment for the treatment of historic properties and applicable guidelines;
- III. Removal of a property from its historic location;
- IV. Change of the character of a property's use or physical features within the property's setting that contribute to its historical significance;
- V. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- VI. Neglect of a property, which causes its deterioration...;
- VII. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

The proposed project will not result in adverse effects to the Central Main Canal and Dogwood canals. The existing bridge over the canals on Scaroni Road will be widened and a second bridge over the canals will be constructed on the proposed Sunset Boulevard extension. The construction of these bridges will not directly impact the canal structures. Historically bridges were constructed across canals for access, as necessary. Initially many of these local access

bridges were simple wooden structures that were later replaced by concrete structures as traffic increased. The construction of the proposed bridges will therefore not result in indirect adverse effects inconsistent with historical uses.

## 5. CONCLUSIONS

Both the Central Main Canal and the Dogwood Canal are considered eligible to the NRHP and the CRHR due to their association with the earliest irrigation system in the Imperial Valley, the Alamo Canal and distribution system constructed circa 1902, and due to their association with the All-American Canal and distribution system. They are recommended eligible under Criterion A as contributing elements to a historic district that includes the All-American Canal and its distribution system, including principal canals and laterals and associated structures. The construction of these vast irrigation systems profoundly altered both the landscape and the economy of the Imperial Valley, transforming it from a barren desert into some of the most productive agricultural land in the United States.

The proposed project will not result in direct or indirect impacts that would adversely affect the historical integrity of the Central Main and Dogwood canals.

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